The November Meteors. By the Rev. S. J. Perry.

The utility of acquiring as complete a knowledge as possible of every detail respecting the important meteor stream that radiates in November from the Lion has induced me to keep up an annual watch from 10 P.M. till sunrise on every night that offers any chance of observation from the 12th to the 16th. The weather of late years has been generally unfavourable; but this year the sky was perfectly cloudless, and this, with the absence of the Moon, presented an opportunity not often met with at this season of the year. On the morning of the 13th only one observer was employed; but during the remainder of the time two observers were stationed facing the N.E., and the watch was uninterrupted from 10 P.M. till sunrise on the 13th, 14th, and 15th.

	Total No. of Meteors.	Mag. greater than 1st.	1st and 2nd Mags.	3rd and 4th Mags.	5th and 6th Mags.
Nov. 13	67	2	25	31	9
„ 14	144	4	39	45	51
„ 15	98	4	31	28	27

The paths of nearly all the meteors could be accurately noted, and the following was the proportion that radiated from the Lion:—

	Number.	Mag. greater than 1st.	1st and 2nd.	3rd and 4th.	5th and 6th.
Nov. 13	16	1	2	10	2
„ 14	53	1	11	10	30
„ 15	35	2	14	12	12

The increase on the morning of the 14th was principally due to meteors of the 5th and 6th magnitude, which constituted considerably more than half the total; on the 15th the magnitudes were very equally distributed.

It may be useful to give the paths of the most brilliant meteors for the sake of comparison with other stations.

	G.M.T. h m	From	Towards
Nov. 12	10 36 p.m.	3° below *β Arietis*	*η Ceti.*
„ 13	3 38 a.m.	*δ Leonis*	*Spica.*
	11 8 p.m.	3° left of *Bellatrix*	Midway between *Sirius* and *Procyon.*
„ 14	4 33 a.m.	*λ Leonis*	Head of *Hydra.*
	5 49	*α Hydræ*	S. Horizon.
„ 15	2 24 a.m.	*ξ Hydræ*	5° W. of *α Hydræ.*
	3 39	*μ Orionis*	*β Eridani.*
	4 9	¼ dist. from *λ* to *κ Leonis*	*γ Canis Minoris.*
	4 34	*κ Leonis*	3° N. of *β Canis Min.*

A first magnitude star was observed on the 15th at $1^h\ 34^m$ A.M. perfectly stationary at R.A. 157° 18′, N.P.D. 52° 30′.

The time of the maximum for this year will be best presented in a tabular form:

		Midnight to 1 a.m.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	5 to 6.
Nov. 13	Total meteors	9	9	7	3	6	3
	Leonids	2	4	3	2	4	1
„ 14	Total meteors	12	19	22	17	23	19
	Leonids	7	9	6	7	15	9
„ 15	Total meteors	10	13	18	23	17	
	Leonids	3	7	5	9	8	

This Table shows that the Leonids were fairly distributed throughout the morning of the 15th, and were generally as numerous as on the 14th. The only approach to a maximum was between 4 and 5 A.M. on the 14th. The principal radiant was slightly below the line joining ε and ζ *Leonis*, and rather nearer the former star, or at R.A. 147° 20′, N.P.D. 67° 10′. The positions of the secondary radiants were R.A. 166°, N.P.D. 67° 40′ between δ and 72 *Leonis*, and R.A. 155° 12′, N.P.D. 54° 54′ between 31 and 37 *Leonis Minoris*. Few of the meteors had trains, and none were visible for more than 4^s.

A large number of meteors radiated towards a point near *Cor Caroli*.

On the 27th the sky was fairly clear from sunset to midnight, but the Moon very bright. No meteors were seen in the direction of *Andromeda*.

Stonyhurst Observatory,
1879, *Dec.* 6.

Occultation of 64 Aquarii by Jupiter, observed at the Melbourne Observatory, September 14, 1879. By R. L. J. Ellery, Esq., Director of the Observatory.

Observed by Mr. Ellery.

Telescope, 8 inches aperture; power 300.

Sky clear and objects steady some time before first contact.

The smallness and faint light of the star as compared with the satellites first attracted attention. The grand colouring of *Jupiter's* belts—one quite purple (with streaks of brick-red in the temperate zones), and the other greenish grey and broad—was remarkable. The star first appeared to touch the planet's limb at $10^h\ 5^m\ 19^s$ M.M.T., and was visible in that position for nearly two minutes, when, while still making a projection on the planet's outline, it all at once appeared as if seen through a mist or haze, *and entirely projected on the planet's limb*. This faded away in about ten seconds, leaving still a decided nipple-like projection on the